THE RELATIONSHIP BETWEEN PROBLEMATIC INTERNET USE AND ACADEMIC PROCRASTINATION AND LIFE SATISFACTION OF UNIVERSITY STUDENTS

by

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ABSTRACT

The internet has taken its place as one of the most indispensable elements in everyday life. Its easy accessibility makes it appealing to people of all ages and socioeconomic levels. The internet is used frequently in virtually every field, especially in education and entertainment, as students’ preferred medium. Over time, frequent use can create adverse effects. Overuse of internet is problematic, as it could cause troubles in people’s work, educational, and social lives. This study examines the relationship between problematic internet use, academic procrastination, and life satisfaction with 243 U.S. university students (M_Age = 22.34, Female = 56%). The Young’s Internet Addiction Test Short Form (IAT-SF) was used to assess the participants’ level of internet addiction. In addition to the IAT-SF, the participants completed the Aitken Academic Procrastination Inventory and Satisfaction with Life Scale. Pearson Product-Moment Correlation and one-way ANOVA were used to analyze the data. An independent-sample t-test was run to determine if there were differences in internet addiction test scores between demographic variables. The analyses indicated that problematic internet use is positively related to academic procrastination and negatively related to life satisfaction. A significant relationship was found between academic procrastination and gender. In addition to this, the daily time spent on the internet is positively associated with problematic internet use, academic procrastination and negatively associated with life satisfaction.

Keywords: problematic internet use, academic procrastination, life satisfaction
DEDICATION

This thesis is dedicated to my family and husband, whose support and love throughout the research process made this journey possible.
LIST OF ABBREVIATIONS AND SYMBOLS

a  Cronbach’s index of internal consistency

M  Mean

N  Number of samples

p  Probability

r  Pearson product-moment correlation

SD Standard deviation

<  Less than

>  Greater than

=  Equal to
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CHAPTER 1

INTRODUCTION

The internet is undoubtedly one of the most significant technological inventions of the last century. It has become an indispensable part of human interactions such as health, communication, education, art, and commerce due to its convenience. The ease of access to the internet and the rapid rise in the number of internet users have led to an increase in the products and services offered on the internet. With the contribution of these products and services to saving the precious commodity of time, internet usage has become a necessity for many people, rather than a choice.

Internet usage has brought a new dimension to communication and entertainment tools such as social networks to the products and services offered on the internet. With the increase of delightful content such as music and video, gaming and entertainment, and social network applications, internet use has become a time-consuming habit. Researchers have recently focused on the problematic, unhealthy, and pathological inability to control internet usage. In other words, an addiction.

The term addiction no longer only means physical addiction such as substance use, but it is also seen in different forms such as social media, the internet, and gaming. The concept of internet addiction was first introduced by Goldberg (1996), who adopted the criteria of substance addiction in the Diagnostic and Statistical Manual of Mental Disorders (DSM 4) for internet use.
(American Psychiatric Association, 1995). Internet addiction is expressed by Young (1996) as not being able to restrain one’s desire to use the internet, and the time away from the internet feeling meaningless. It may lead to withdrawal symptoms (extreme irritability and aggression) similar to other addictions. Caplan (2002) simply defined internet addiction as the generally uncontrolled and harmful use of the internet. Based on these definitions, excessive use of the internet is an impulse control disorder that can bring about mental and physical problems.

Researchers have used many different terms to describe the adverse effects of the internet, such as internet addiction (Young, 1998), internet addiction disorder (Goldberg, 1997), pathological internet use (Gonul, 2002), and problematic internet use (Davis et al., 2002; Caplan, 2005). This study will adopt the concept of problematic internet use (PIU).

Individuals with PIU experience a loss of control over time associated with their internet use. Accordingly, individuals find themselves experiencing troubling moods that may lead to functional impairments in their daily activities (Shapira, 2003). According to Aboujaoude (2010), internet is presented as an excellent source of opportunities for many users and use varies according to age, gender, and interests. These opportunities have led a rapid increase of usage worldwide.

PIU does not have any age restrictions, but the most significant at-risk group is young adults who tend to be exploring their identity (Öztürk, 2007). In addition to causing behavioral disorders in individuals, it can lead to copyright violations, pornography addiction, gambling, violent tendencies, etc. Along with these negative aspects, intensive use of computers, mobile phones, and the internet may adversely affect the mental, emotional, social, sexual, moral, and physical development of adolescents and young adults (Caplan, 2002; Peker, 2013; Young, 2004). These developmental issues can lead to social and educational difficulties.
At university, young people prepare for professional and social life. In this process, the tasks and responsibilities of students are postponed or left undone for various reasons due to PIU. PIU could lead to delays in work and academic responsibilities (Day et al., 2000). In other words, the internet may offer some advantages, but the lack of controlled use may bring about some risks for university students. Individuals may lose the concept of time while using the internet and are unaware of how much time they spend. Therefore, determining the reasons for academic procrastination behavior of university students is of great importance. This study will examine PIU as one of the factors that may lead to academic procrastination.

It is expected that there will be a connection between life satisfaction and academic success in university life. Research show that academic variables are as effective as personal variables in predicting life satisfaction (Chow, 2005; Powers, 2008). Some of the main factors affecting a student’s academic achievement are effective and productive work habits, time management, daily planning, establishing healthy relationships, setting goals, and having a positive outlook. Consequently, individuals may experience negative effects such as anger, tension, and withdrawal from social life due to failure and disruption of their work, impacting their life satisfaction (Ceyhan, 2008). Wang et al. (2008) stated that internet addiction may reduce academic achievement, lead to deterioration in interpersonal relationships, and may be seen as an excuse to avoid problems, thus leading to decreased life satisfaction. In another study conducted with university students, it was concluded that as the weekly internet use increased, life satisfaction decreased. It has been shown that as the time spent on the internet increases, students begin to prefer the virtual environment to the social environment, resulting in a decrease in life satisfaction due to loneliness (Balcı & Koçak, 2017). In this context, it is essential to investigate the role and effect of internet use in academic procrastination among university students.
Previous studies show, PIU to be associated with depression and anxiety (Jang et al., 2008; Lee et al., 2014); impulsivity, hostility, irritability and lower self-esteem (Cao et al., 2007; Ko, 2007; Yen, 2008); social interaction difficulties (Yang & Tung, 2007); attentional difficulties, poor school performance (Chang et al., 2014); conflicting relationships and poor parental support (Li et al., 2014) and stressful life situations (Yadav et al., 2013). Overuse of the internet can cause problems with time management (Chou & Hsiao, 2000). In addition, Cao and colleagues (2007) emphasized that PIU has negative consequences for students. Likewise, Khan et al. (2016) stated that PIU reduces academic performance and observed a significant procrastination tendency among university students (Kachgal et al., 2001; Day et al., 2000; Solomon & Rothblum, 1984). The internet, which students previously used in academic settings for learning and research purposes, has become an important part of students' lives over time. Its unlimited opportunities and popularity have led excessive use among students (Chou et al., 2005). It can be said that excessive use of the internet is widespread among university students. Although much of the literature on internet use applied to different samples, problematic internet use, academic procrastination, and life satisfaction, which are related to each other, have not yet been studied together.

In the light of this information, university students’ PIU could lead to academic procrastination and adversely affect life satisfaction. This study will discuss the definition of addiction and then the problematic use of the internet. Secondly, academic procrastination and life satisfaction will be examined. Finally, this study explores how problematic internet use influences university students' academic procrastination and life satisfaction.
CHAPTER 2

LITERATURE REVIEW

Addiction

Historically, the term "addiction" has been used concerning certain psychoactive substances such as alcohol, cocaine, or nicotine. According to the current Diagnostic and Statistical Manual for Mental Disorders (DSM-5), essential parts of addiction consist of pharmacological criteria (tolerance, withdrawal), risky use (maintenance of intake despite awareness of harming psychological or physiological effects), impairment (e.g., narrowing of interests, neglect of other areas of life), and control disorder (e.g., increased craving, unsuccessful attempts to reduce intake) (American Psychiatric Association, 2013).

Substance addiction is the frequent use of substances that cause clinically significant impairment in functionality and some behavioral problems (Morrison, 2017). Non-substance-related behavioral addiction is defined as excessive and repetitive behavior despite physical, psychological, social, and economic harm, in addition to an extreme desire to engage in and loss of control over this behavior (Olsen, 2011). Griffiths (2005) suggested that behavior addiction has six components (salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse) and defined any behavior that includes these six components as addiction. These six components are defined as follows:
• Salience: Happens when the behavior becomes the most crucial activity in the person's life and controls their thinking, behavior, and feelings.

• Mood modification: Personal experiences that individuals describe as a result of being involved in a particular activity and that can be considered a strategy of coping.

• Tolerance: Is the procedure in which it is necessary to gradually increase the relevant behavior in order to reach the effect it created at the beginning.

• Withdrawal symptoms: Distasteful moods and/or physical effects, such as moodiness or irritability, that occur when the relevant behavior is stopped or suddenly reduced.

• Conflict: Describes to the disagreements between the addicted individual and the people around them (interpersonal conflict) or within themself (intrapsychic conflict) regarding the relevant behavior of the individual.

• Relapse: Is the repetition of the relevant behavior with its previous patterns.

Griffiths (2005) suggests that any behavior that meets these six criteria can be defined as a behavioral addiction. Internet addiction is one of the types that fall into the category of behavioral addictions. In summary, if a person uses the internet in a way that meets the above criteria, they are considered to be a problematic internet user. Put simply, if a person feels relaxed and disconnected from their problems when using the internet, spends longer time on the internet each time, feels uncomfortable when they cannot access the internet, and cannot spare time for their family, friends, and themselves due to internet use, it can be said that person is an internet addict (Griffths, 1999).
Internet Addiction and Problematic Internet Use

The internet is a medium to access online content and certain applications. Currently, approximately 5 billion people use the internet all over the world, which means that almost 60% of the world population has access to the internet (Internet World Stats, 2020). Internet use consists of a series of activities, such as accessing social sites (social media, online gaming, online shopping), searching for business related information (sending e-mail, browsing), downloading websites that offer television shows, news, or pornography (Fumero et al., 2018).

Goldberg (1996) initially defined internet addiction as the continuous increase in the duration of internet use and the occurrence of problems in business, social, and other functional areas, considering the criteria of substance addiction. Griffiths (1998), on the other hand, emphasized that internet addiction should be viewed from a multi-faceted perspective such as keyboard use, chat, e-mail, bulletins and games, access to communication environment, lack of face-to-face contact, and content on the internet.

Young (1999) defined problematic internet use according to the criteria of "pathological gambling" and of the eight criteria; meeting 5 of them may indicate that the person is addicted. 1. Preoccupation with the internet (constantly thinking about spending time on the internet and dreaming of activities performed on the internet).

2. Increasing the need to use the internet to experience the desired pleasure.

3. Unsuccessful attempts to control the level of internet use, reduce internet use, or stop using it.

4. Feeling restless, depressed, or angry when internet use is reduced or stopped.

5. Spending more time on the internet than the time determined by the person.

6. Experiencing problems with family, school, work, friends, and other difficulties due to excessive internet use.
7. Lying to others, such as family members, friends, and therapists, about their time online.
8. Using the internet to escape from problems or negative emotions.

Suler (1999) also determined eight criteria in order to distinguish between healthy use and problematic use of the internet:

1. The more needs (physiological, internal, interpersonal, and spiritual) the activities done on the internet address, the longer the individual stays on the internet.
2. When the individual cannot be satisfied with their needs in real life, they try to overcome the deprivation of these needs in the internet environment.
3. The types of activities that can be done on the internet are quite diverse (games, software, literature, synchronous-asynchronous conversations, visual and written communication, etc.). The more an activity on the internet contains at the same time, the more attractive it is to the individual in terms of meeting their needs.
4. The extent to which the activities done on the internet impair the success of the individual in their work and their relationships show the depth of the pathology related to internet use.
5. Internet activities only superficially address the needs of the individual, and this superficiality aggravates the needs leading to increasing depression, frustration, guilt, and anger.
6. The unconscious desire to meet the suppressed needs and wishes of the individual's subconscious causes compulsive internet use. When the individual meets their needs and desires at a conscious level, the use of the internet will decrease.
7. When the individual who spends a lot of time on the internet realizes that it is insufficient to satisfy their needs, and they will realize that these are traps and return to the real world to meet their needs.
8. It is ideal to have a balance between the virtual and the real world. For example, meeting virtual acquaintances in real life or spending time in virtual environments with people from real life. In problematic use, the person becomes completely isolated from real life and creates a virtual life. There are many potential dangers associated with excessive use of the internet. Psychiatric studies reveal that PIU is associated with mood and anxiety disorders, along with other accompanying disorders (Shapira et al., 2000).

The common points of the definitions made by researchers reveal that definitions concentrate on the duration of internet use. (Young, 1998). It has been stated that when there is no internet access, symptoms such as anxiety, irritability, and the need to spend more time on the internet appear. Along with increasing excessive use of internet research, Internet Gaming Disorder was included in the updated version of the American Psychiatric Association's (APA) DSM-5 in 2013.

Block (2008) proposed four identifiers that are necessary for the diagnosis of excessive use of the internet as an addictive behavior:

Excessive use, often associated with a loss of sense of time or a neglect of basic drives, withdrawal, including feelings of anger, tension, and/or depression when the computer is inaccessible, tolerance, including the need for better computer equipment, more software, or more hours of use, and negative repercussions, including arguments, lying, poor achievement, social isolation, and fatigue. (p. 306)

According to Young (2004), the effects of internet addiction are listed as weaknesses and ruptures in with relationships, disruptions in academic performance and decreased success,
health problems resulting from deterioration of physical activities and diet, psychological problems (such as an increase in the level of depression), problems with socialization, sleep problems and insomnia, reluctance to engage in activities other than the internet.

Internet addiction is characterized by excessive or uncontrollable preoccupation, desires, and behaviors related to computer use and access to the internet (Shaw & Black, 2008). Some researchers believe that using the internet excessively may not as always indicate an internet addict. Although unhealthy internet use was first named as "internet addiction," there is still no agreed-upon definition. Researchers have referred to it as "internet addiction" (Fumero et al., 2018; Young, 1998), "pathological internet use" (Davis, 2001), "problematic internet use" (Davis et al., 2002; Caplan, 2005, Odaci, 2011), "internet dependence" (Scherer, 1997), “internet addiction disorder” (Goldberg, 1996). Although no standard definition has been made for this behavior, the common point of the terms and definitions used in research is that a person spends more time on the internet than is acceptable, shows signs of distress and tension when not accessing the internet (Young & Rodgers, 1998; Chou et al., 2005). One indicator used to detect excessive internet use is the time spent online per day. For this reason, studies suggest using the time spent online as a means of diagnosing excessive internet use (Tao et al., 2010).

Different concepts are used when defining problems related to the internet. The reason for this situation is that when defining the problem, it is tried to be explained with one of the emotional, behavioral or cognitive components (Davis, 2001). Basically, all these concepts are used similarly and can be considered within the scope of excessive and problematic internet use as a starting point (Beard & Wolf, 2001). In this study, "problematic internet use" is preferred as the concept that indicates unhealthy use of the internet. The reason why the concept of problematic internet use is preferred is the use of terms such as addiction, disorder or dependence
in clinical studies (Gmel et al., 2017). At the same time, PIU is the most frequently used term today (Gmel et al., 2017).

Many different psychiatric symptoms are seen together with PIU. A study on individuals with PIU found comorbid conditions like Attention Deficit and Hyperactivity Disorder (14%), Generalized Anxiety Disorder (15%), Hypomania (7%), Anxiety (15%), Dysthymia (7%), Obsessive-Compulsive Disorder (7%), Borderline Personality Disorder (14%), and Avoidant Personality Disorder (7%) (Bernardi & Pallanti, 2009). Additionally, many problematic internet users have familial problems (Bernardi & Pallanti, 2009; Lam et al., 2009). There is no definite relationship between PIU and how these disorders affect each other. On the other hand, it is complicated to evaluate the addictions developed through the internet. For example, it is quite complicated to determine whether a person who gambles on the internet is addicted to the internet or gambling (Blaszczynski, 2006).

PIU is a situation that arises with the increasing time spent on the internet, negatively affecting daily life, private life, and career. The increase in the time spent on the internet can also cause physical problems such as posture and visual disturbances, as well as have effects on the psychology of the person. At the same time, studies have shown that the social life of people who use the internet in a problematic way is negatively affected as the individuals tend to self-isolate and prefer to spend time with technological devices over social life.

Problematic Internet Use Among Students

Problematic internet use is common among students. According to Nalwa and Anand (2003), the use of the internet began when the use of the internet became compulsory in schools to increase the efficiency of students regarding lessons, and this is a factor that leads students to
pathological internet use. Internet use has become a necessity. As for the whole society, it is an indispensable place for students in their school lessons and homework. However, when this situation reached the level of problematic use, instead of increasing the students' academic success, it started to affect academic success.

There are many studies in the literature about students' internet use. According to a study that aimed to investigate the relationship between PIU among medical faculty students in Nepal, 53 out of 166 students were found to use the internet problematically (Sharma et al., 2020). Chou & Hsiao (2000) examined university students' internet addiction and their attitudes towards the internet. 910 university students participated in the study. It was observed that the students who were determined to be addicted to the internet spent three times more online than non-addicted students.

Studies have also found relationships between students' internet use and academic success. Kubey et al. (2001) examined the relationship between students' internet use and academic performance on 572 university students. According to their findings, it was concluded that the academic performance of problematic users was four times lower than those who use the internet in a healthy way.

According to the results of the research, there is a relationship between PIU and the decrease in success in school life and profession, decrease in sleep hours, low quality of food, limitation of areas of interest, and neglect of other areas in a person’s life (Chou et al., 2005; Nalwa & Anand, 2003; Young, 1998). Caplan (2005) examined the relationship between PIU and individuals' social skills and self-disclosure tendencies. 251 university students took part in the study and reported that those who cannot communicate face to face prefer online
communication, leading to PIU. Tsai and colleagues (2009) stated that 680 students fell into the category of internet addiction in a study conducted on 1360 university students in Taiwan that examined risk factors for internet addiction. In addition, they reported that there was a positive correlation between internet addiction among male students and neurotic personality traits. It was concluded that those who do not have breakfast and have low social support are prone to internet addiction.

Studies have found cognitive distortions and psychological problems associated with the unhealthy use of the internet. Yeo & Lu (2015) investigated the role of cognitive distortions and other risk factors of PIU in their study on 1493 university students in Malaysia. Research findings showed that depression, motivation, loneliness, and stressful life events significantly predicted PIU. McNicol & Thorsteinsson (2017) examined a study group of 449 people with internet addiction, psychological problems, and coping strategies in adolescents and adults. Results showed that internet addiction has a positive and significant relationship with depression, anxiety, and stress. Yao & Zhong (2014) examined the relationship between pathological internet addiction and loneliness, social anxiety, and depression in university students. This study, involving 361 university students in Hong Kong, showed that excessive and unhealthy internet use increases the feeling of loneliness over time. At the same time, it has been found that online communication cannot be an alternative to face-to-face communication for reducing the feeling of loneliness. It was concluded that face-to-face communication reduces the symptoms of pathological internet addiction.
Problematic Internet Use with Gender, Ethnicity and Age

Gender may be one of the most frequently studied variables in relation to problematic internet use (PIU) symptoms. In research on technology use, the gender variable is also frequently addressed, and it is claimed that there are differences between men and women in terms of duration, frequency, and forms of use (Akbulut, 2013). The most recent study reviewed 115 independent samples from 34 countries (Su et al., 2019). Researchers reported gender differences, where men were more vulnerable to PIU symptoms compared to women. When the research results on gender were examined, it was found that there were more males with PIU than females (Çelik & Odacı, 2011; Chou & Hsiao, 2000; Moranhan & Schumacher, 2000; Niemz, Griffiths & Banyard, 2005; Scherer, 1997). Another study determined that men are more interested in the internet than women (Deniz, 2005).

When the results of the research on gender are examined, it is seen that PIU is higher in males in some studies (Niemz, Griffiths, & Banyard, 2005; Akbulut, 2013; Balta & Horzum, 2008). According to another study, women are more prone to problems related to online communication and social media use, while online gaming is more common among men (Bouna-Pyrrou et al., 2015; Spilkova et al., 2017; van den Eijnden et al., 2018). Considering the studies, it is possible to mention that there is a common opinion among researchers that the purposes of internet use vary according to gender.

According to the Pew Research Center (2021), which systematically monitors American internet use, 93% of American adults use the internet. Rankings by age group in the United States in 2021, 99% of 18- to 29-year-olds in the United States were found to be internet users. One-third of online users worldwide are between the ages of 25 and 34, making them the largest
group of online users (Statista, 2021). For this reason, it is of great importance to investigate the problematic internet use of university students, who are among the highest risk groups.

Few studies have shown that ethnic differences are associated with internet access (Milioni, D. L., et al., 2014). According to Pew Research Center (2021), it is found that 78% of Whites use the internet, and 68% of African Americans and 75% of Hispanics use the internet. (Pew Research Center, 2015). According to this result, it can be said that whites are more likely to use the internet than other ethnicities.

**Procrastination**

The general definition of procrastination is to postpone essential tasks until a feeling of discomfort occurs, and it is considered to be a problematic behavior (Aitken, 1982; Solomon & Rothblum, 1984; Steel & Klingsieck, 2016). Another definition is delaying starting or completing a planned behavior and/or delaying decision making (Steel, 2007). Procrastination has three main characteristics; there is a case of unintentional delay and activity or decision, resulting in poor performance or failure (Milgram et al., 1995). Dryden (20012) defined the tendency to procrastinate as a person leaving something to be done for another time. Besides, he emphasized the three main features of procrastination: First of all, there is a job to be done, it is important that the action takes place within a certain period of time, and the execution of the action is left to another time, not at that moment. Procrastination, which can lead to serious problems in academics and personal relationships, is a coping mechanism for anxiety about the initiation or completion of any task or decision (Fiore, 1989). According to Eerde (2003), procrastination is a form of avoidance, the thought of which leads to cognitive distortion. The individual sees avoiding the oppressive activity as safer (Knaus, 2010). According to Milgram et
al. (1995), boring, complex, or unpleasant tasks lead to further delays. In addition, the lack of persistence or the difficulty a person faces in maintaining targeted behavior also causes procrastination (Dewitte & Schouwenburg, 2002).

Procrastination is a concept that causes failure and stress in life and creates negativities. How problematic procrastination depends on the negative impact on the individual's life. Not every delay is a procrastination behavior. Some delays can be part of the strategic solution. Real procrastination behavior causes increasing anxiety. When procrastination is combined with a sense of inadequacy and some skill deficiencies, it can cause much more serious psychological disorders such as depression and obsessive-compulsive disorders (Knaus, 2000).

Procrastinating behavior leads to serious failures and problems in both interpersonal relations and academic fields regarding the initiation or completion of a task or decision (Fiore, 1989). Studies have shown that the relationships between procrastination and self-regulation, avoidance of task, self-efficacy and anxiety, motivation, time management, negative attitude towards work and learning, difficulty concentrating, academic achievement, self-esteem, five-factor model, perfectionism, locus of control, task difficulty, self-control, and gender were examined (Senecal et al., 1995; Haycock et al., 1998; Blunt, 1998; Watson, 2001; Flett et al., 1992; Ferrari et al., 1995; Janssen & Carton, 1999; Lay, 1997; Kachgal et al., 2001).

**Academic Procrastination**

The literature reveals that there are many types of procrastination behavior. One of these types is academic procrastination. Rothblum et al. (1986) defined academic procrastination behavior as when academic tasks are delayed, leading to worry about postponed academic responsibilities. Another definition is postponing the academic duties that individuals need to
perform until they experience high anxiety or feel discomfort (Rozgonjuk et al., 2018). It can lead to delay and put management-related work in the background (Solomon & Rothblum, 1984). The features distinguishing academic procrastination from other types of procrastination were determined as delaying the planned time to start work or delaying starting work, inconsistency of work behavior with work intention, and the desire to engage in activities other than work. (Ferrari et al., 1995).

Academic procrastination is seen as a common problem that negatively affects students' academic achievement (Kim & Seo, 2015; Lakshminarayan et al., 2013). Academic procrastination creates stress in students' lives leading them to fail (Ferrari et al., 1995). Studies have shown that academic procrastination can be caused by deficiencies in time management and self-regulation skills, evaluation anxiety, perceiving the task as repulsive, fear of the consequences of success, depression, anxiety and low self-esteem, irrational beliefs, and perfectionism (Ferrari et al., 1995; Ziesat et al., 1978; Solomon & Rothblum, 1984; Senécal et al., 1995). As a result of academic procrastination, fear of exams, stress, low success or failure in exams, less learning or dropping out (Bäulke et al., 2018; Hussain & Sultan, 2010; Day et al., 2000; Ferrari et al., 1995; Hill et al., 1978; Wesley, 2014). In fact, researchers have concluded that the most important factor in students' failure is academic procrastination (Schouwenburg et al., 2004). The behavior of procrastination, which seems to be an obstacle to success, not only negatively affect academic achievement but also decreases life satisfaction, causes negative emotional disorders such as depression, anxiety, learned helplessness, increases stress reactions and decreased self-esteem and self-confidence (Ferrari & Emmons, 1995; Flett et al., 1995; Lay, 1987; McCown et. al., 1987; Moon & Illingworth, 2005; Van Eerde, 2003).
The literature suggests that the reason for academic procrastination behavior is due to a motivational problem. Individuals who procrastinate do not focus on the behavior they are delaying. Instead, they prefer to put other situations in the foreground and spend time with them. In general, students devote their free time to other activities instead of fulfilling their academic responsibilities (Franziska et al., 2007).

When the relationship between academic procrastination and gender was examined, it was seen that academic procrastination behavior differed according to gender. Khan et al. (2014) examined the academic procrastination behaviors of male and female university students according to the variables of gender, level of education, and age. It was determined that male students had more academic procrastination behavior than female students. According to some studies, men procrastinate more due to their less self-regulated academic behavior (Dominguez-Lara, & Campos-Uscanga, 2017). Most of the studies revealing that academic procrastination behavior differs with the gender variable stated that male students have high academic procrastination scores (Olea & Olea, 2015; Khan et al., 2014; Özer et al., 2009; Steel & Ferrari, 2013; Balkıs, 2007; Çelikkaleli & Akbay, 2013).

**Problematic Internet Use and Academic Procrastination**

Problematic internet use, which has also been defined as excessive or inadequately controlled occupations, impulses, or behaviors that lead to disruption and distress, has so far been described in many different ways. This chapter reviews a summary of previous research associated with this study.

Academic failure and academic procrastination due to excessive use of the internet are commonly studied effects. Young (1998) found that 58% of students suffer from unproductive
study habits, low grades, and expulsion from school due to excessive internet use. Iftene et al. (2004) reported cases of school absenteeism and students refusing to go to school due to excessive time spent on the internet. Griffiths (2000) discussed the possibilities where students who spent the whole night without sleep on the internet could not complete their homework and missed classes.

Researchers have stated that PIU has a negative effect on students in the education process, such as failing at school, missing lessons, not taking exams, or failing exams (Griffiths, 2001; Young, 2004). Studies have shown that there is a positive relationship between PIU and academic procrastination (Chin-Sheng & Chiou, 2007; Saleem et al., 2015; Yang & Tung, 2007; Young, 1999). In the study conducted by Geng (2018) with young adults, the relationship between PIU, postponement, and their fundamental processes was investigated. PIU is positively associated with academic procrastination, and the study demonstrated that PIU is an essential indicator of procrastination in young Chinese adults. Also, it is suggested that students with an above-average degree of PIU were more likely to procrastinate. On the other hand, in a study conducted with 398 students on procrastination, problematic internet use, and academic self-efficacy, Odaci (2011) found that academic self-assurance may be responsible for ambiguous internet usage.

Studies have revealed that academic procrastination is negatively associated with academic achievement, learning in academic environments, and self-regulation. (Balkis & Duru, 2015; Kim & Seo, 2015; Park & Sperling, 2012). Research has drawn attention to the effects of PIU on academic life. In the study by Moreno et al. (2011), PIU was associated with as low grades, missed classes, and academic dismissals. The literature emphasizes that PIU negatively affects academic work. (Chen & Lu, 2016; Mohammadi et al., 2015; Odacı & Çelik, 2012; Uzun et al.,
2014). In other words, there is a positive relationship between problematic internet use and academic procrastination.

Studies show that the academic success of individuals who overuse the internet and spend a lot of time on the internet are negatively affected (Andreassen, 2012; Kirschner & Karpinski, 2010). They cannot spare time for academic studies, work, and other vital activities (Andreassen, 2012). As a result of not using the internet in a healthy way, the lack of time for academic tasks and activities can lead the individual to academic procrastination. In line with this information, it can be stated that the satisfaction of basic psychological needs and PIU are important variables associated with academic procrastination.

PIU, which is mostly seen in university students, pushes them to disregard or postpone their responsibilities. Young people who are addicted to the internet often postpone vital tasks such as studying, sleeping, resting, and eating. Therefore, it is thought that PIU triggers academic procrastination behavior.

**Life Satisfaction**

Individuals encounter a lot of emotions throughout their lives and look for ways to cope with them. Among these feelings and life events, people try to increase or maintain the pleasure and satisfaction they get from life. The patterns individuals develop about themselves, their lives, and their relationships can change and shape their perceived life satisfaction. The concept of life satisfaction was first defined by Neugarten et al. (1961) as the result that emerges after people’s expectations from themselves and their lives are compared with the existing situation or result. Life satisfaction refers not only to the satisfaction related to a certain situation but also to the satisfaction that one gets from their whole life. Life satisfaction is measured subjectively and is
defined as a positive evaluation of the quality of one's life, personal health, education, income, and social status according to criteria set by oneself (Diener, 1984).

Life satisfaction is a subjective, dynamic, and multifaceted concept. It is an abstract view closely related to happiness and subjective well-being (Vittersø et al., 2009). According to Diener and Lucas (1999), life satisfaction includes satisfaction with current life, desire to change life, satisfaction with the past, satisfaction with the future, and the views of one's relatives about that person's life. Areas of satisfaction can be work, family, leisure time, health, money, self, and the person's close environment.

Life satisfaction reflects the individual's evaluations of their life areas (Myers & Diener, 1995). As a result of the individual's assessment of their life, according to their own criteria, getting satisfaction from their life, experiencing more positive emotions and less negative emotions will make them happy. The results of the studies also show that there is a negative relationship between life satisfaction and depression, hopelessness, and anxiety. This reveals more concretely the importance of being satisfied when individuals evaluate their lives (Dorahy et al., 2000; Gundogar et al., 2007; Serin et al., 2010). Thus, it becomes even more important for society that university students find satisfaction in their lives (Moller, 1996).

According to the studies examining life satisfaction and gender, significant differences were found. In some studies, it was found that general life satisfaction was higher in females than males. (Uz Bas, 2011; Tuzgol Dost, 2007). On the other hand, some of the studies conducted on age groups indicate that there is no significant relationship between life satisfaction and gender (Fugl-Meyer, Melin, & Fugl-Meyer, 2002; Hampton & Marshall, 2000; Hintikka, 2001; Katja, et al., 2002). According to Diener (1984), variables such as gender and age are among the factors
affecting life satisfaction. However, Diener (1996) stated that socio-economic status shows relatively stronger life satisfaction relationships than age and gender.

The relationship between life satisfaction and PIU has been the subject of limited research (Ko et al., 2005; Wang et al., 2008; Ko et al., 2007). These studies indicate the existence of an inverse and directional relationship between PIU and life satisfaction. Wang et al. (2008) stated that long-term internet use negatively affects individuals' life satisfaction by causing a decline in academic achievement, deterioration in interpersonal relationships, and turning into an excuse to avoid problems. It was found that there is a negative relationship between life satisfaction and PIU (Longstreet & Brooks, 2017).

Recent studies attempted to determine the relationship between PIU and life satisfaction. For example, Wang (2006) conducted a study on Chinese students studying in the USA and found a positive and significant relationship between internet use and life satisfaction. This study also showed that "internet use" and "entertainment motivation" were positive and significant determinants of life satisfaction. Gülnar and Balcı (2011), on the other hand, determined that there is a low-level positive relationship between students' motivation to use the internet and their life satisfaction in their research on international students. Balcı and Koçak (2017), in their study on university students who use social media, determined that as the frequency of weekly social media use increases, there is a decrease in the level of life satisfaction of university students. Although some studies show a positive relationship between internet use and life satisfaction, over time, individuals' spending all their time on the internet may lead them to prefer the virtual environment. It should also be considered that this may cause students to become lonelier and negatively affect their life satisfaction.
There is also a duality in the study results of life satisfaction and internet use. Some studies argue that people have a large social circle due to their high life satisfaction. Therefore, their internet use is high because they strengthen their communication with these people via the internet (Valenzuela et al., 2009). On the other hand, other studies indicate that people tend to increase their life satisfaction through social environment communication by increasing their internet use due to their low perceived life satisfaction (Ellison et al., 2007).

Life satisfaction is also associated with academic procrastination. It can be said that academic procrastination behavior is to postpone academic tasks in a way that leads to failure, academic unhappiness, or stress. Students who procrastinate in academics face various negative consequences (Kandemir, 2014). Researchers found a negative relationship between students' life satisfaction and academic procrastination behaviors and that life satisfaction predicted academic procrastination (Binder, 2000; Savithri, 2014). Some studies have shown that college students with low life satisfaction tend to participate in online networks to improve their personal well-being, while low life satisfaction has been found to be associated with a severe addiction to online gaming (Ellison et al., 2007; Ko et al., 2005).

The effect of academic achievement on university students' satisfaction with their lives has also been one of the subjects that attracted the attention of researchers. Results showed that life satisfaction and academic achievement are related, and academic success is a predictor of life satisfaction (Chow, 2005; Powers, 2008). Indicating that students with high academic achievement are more satisfied with their lives. Dost (2007), in his study with 403 students, determined that students' life satisfaction differs according to their perceived academic success. Accordingly, it was concluded that individuals who perceive their academic achievement to be at a high level have greater life satisfaction. This study shows emotional intelligence, life
satisfaction, and academic success are concepts that are interconnected and influenced by each other. These results bring to mind the question of what kind of relationship there is between academic procrastination and life satisfaction.
CHAPTER 3

PURPOSE AND SIGNIFICANCE

The literature review showed that the effect of problematic internet use (PIU) on students' academic procrastination behavior and their satisfaction with life is an important research subject. It has been observed that the internet has a structure that can make a person become dependent over time with the possibilities and the sense of freedom it provides (Makas, 2008). The internet has become an indispensable requirement in many areas of life. It has started to be widely used in all student groups, especially due to the transition to distance education due to the COVID 19 pandemic. Most studies begin with the assumption that internet use is sometimes out of the control of the individual and causes deterioration in social or professional/academic functionality (Beard, 2005).

The group with the highest risk for internet addiction is university students. Today, internet addiction is more common, especially in university students who use more social media tools and have increased internet access opportunities. For this reason, university students were the subject of this investigation. This study examined the relationship between internet addiction and life satisfaction levels of university students and the differentiation of these research variables according to demographic characteristics. To date, no study has been found that examines the relationship between PIU and variables such as academic procrastination and life satisfaction. To fill this gap in research, this study aims to determine the relationship between problematic internet use, academic procrastination, and life satisfaction. Additionally, this study
examined whether the variables of problematic internet use, academic procrastination, and life satisfaction differ significantly according to the demographic characteristics of the participants.

**Research Questions**

The main purpose of this study is to determine whether there is a significant relationship between problematic internet use, academic procrastination behaviors, and life satisfaction among university students.

**Question 1.** Is there a significant relationship between problematic internet use and academic procrastination?

**Question 2.** Is there a significant relationship between problematic internet use and life satisfaction?

**Question 3** Is there a significant relationship between academic procrastination and life satisfaction?

**Question 4.** Do problematic internet use scores differ according to demographic variables (gender and ethnicity)?

**Question 5.** Do academic procrastination scores differ according to demographic variables (gender and ethnicity)?

**Question 6.** Do life satisfaction scores differ according to demographic variables (gender and ethnicity)?

**Question 7.** Do problematic internet use, academic procrastination, and life satisfaction scores differ significantly according to the amount of time spent on the internet?
Research Hypotheses

**Hypothesis 1.** Students who are more likely to engage in problematic internet use will be more likely to procrastinate academically.

**Hypothesis 2.** Students who are more likely to engage in problematic internet use will be more likely to experience low life satisfaction.

**Hypothesis 3.** Students who are more likely to procrastinate academically will be more likely to experience low life satisfaction.

**Hypothesis 4.** Male students are more likely to engage in problematic internet use than female students. White students are more likely to engage in problematic internet use than non-white students.

**Hypothesis 5.** Male students are more likely to procrastinate academically than female students. White students are more likely to procrastinate academically than non-white students.

**Hypothesis 6.** Male students are more likely to experience low life satisfaction than female students. White students are more likely to experience low life satisfaction than non-white students.

**Hypothesis 7.** Students who are more likely to engage in problematic internet use, procrastinate academically and experience low life satisfaction will be more likely to spend more time on the internet.
CHAPTER 4

METHOD

The process below shows how the research questions and hypotheses were addressed.

Participants

In order to calculate statistical power, the sample size, significant level (α), and effect size must be known or determined (Cohen, 2003) before data collection. At the beginning of the study, G-Power was used to determine the sample size considering the power of the study. The statistical power level was set at 0.80, the significant (alpha) level was taken as 0.05, and the effect size was taken 0.25 to calculate statistical power (Cohen, 1988). Power analysis calculation has been done for test-test and correlation analysis. The research participants consisted of (N=270) university students whose ages ranged from 18 to 52 years old from the University of Alabama.

Materials

In the study, a personal information form and three different research instruments are used. The survey required approximately 8-10 minutes to complete.

Personal Information Form

This form captures the variables of students' gender, age, ethnicity, education level, self-reported GPA, and time spent on the internet.
Young’s Internet Addiction Test Short Form (IAT-SF)

The Internet Addiction Test Short Form (IAT-SF), converted into a short form by Pawlikowski and his colleagues (2013), is used in this study to examine internet addiction. The scale consists of 12 items, and it is a 5-point Likert-type measurement tool. The scores obtained from the scale vary between 12-60. An example item is “How often do your grades or schoolwork suffer because of the amount of time you spend online”? The internal consistency reliability coefficient of the scale was .85, and coefficient alpha was .87 (Pawlikowski, 2013). There are no items scored in reverse on the scale. High scores from the scale indicate a high level of internet addiction.

Aitken Academic Procrastination Inventory

The Academic Procrastination Scale (Aitken, 1983) was used to measure students' tendencies to postpone academic duties. The scale is a 5-point Likert-type scale consisting of 19 items in one dimension. Individuals are asked to rate themselves between 1 and 5 points for each item (1 “Totally Wrong,” 5 “Totally Correct”). An example is, “When I have a test scheduled soon, I often find myself working on other jobs when the test deadline is near.” After answering all the questions in the scale, the items numbered 2, 4, 7, 11, 12, 14, 15, 16, 17, 18 in the scale are calculated in reverse order, and a total score is obtained on a total of 19 items. High scores indicate that individuals tended to procrastinate. The internal reliability coefficient of the scale is .82, and coefficient alpha was .92.

The Satisfaction with Life Scale

The Life Satisfaction Scale developed by Diener, Emmons, Laresen, and Griffin (1985) is used to determine the life satisfaction levels of students. The scale consists of five items related
to life satisfaction. Each item is answered according to a 7-graded response system (1: strongly disagree - 7: strongly agree). The scale, which aims to measure general life satisfaction, is suitable for all ages, from adolescents to adults. An example is, “If I could live my life over, I would change almost nothing.” High scores on the scale show high satisfaction with life. The coefficient alpha for the scale has ranged from .79 to .89, indicating that the scale has high internal consistency. The scale was also found to have good test-retest correlations .82, and coefficient alpha was .87 (Pavot & Diener 2008).

**Procedure**

Young’s Internet Addiction Test Short Form (IAT-SF), Aitken Academic Procrastination Inventory, Satisfaction with Life Scale and personal information form were administered to the subjects. All four questionnaires were completed by students via the Qualtrics survey hosting provider and ESPRMC research pool. The estimated time to complete these questionnaires was 10 minutes.

Participants were students at the University of Alabama who were enrolled for courses in the College of Education and College of Engineering during the Fall Semester in 2020. College of Education student participants who took the survey from the ESPRMC research pool received extra course credits. Students who did not want to participate in this study did not lose any benefits or rights, and it did not impact their grades. College of Engineering students took the study voluntarily and did not receive any credits. At the beginning of the survey, participants were provided with an informed consent document and made aware that they could withdraw from the study at any time.
Reliability

Cronbach’s alpha (Cronbach, 1951) was used to evaluate the reliability of the scales used in this study. The internal consistency of Young’s Internet Addiction Test Short Form (IAT-SF) is .84. The scale was used by Wegmann et al. (2015) to explain the addictive use of social networking sites with the interaction of internet use expectations, and they found Cronbach’s alpha .88. The internal consistency of the Aitken Academic Procrastination Inventory is .90, and that is higher than previous research. Ferrari & Pychyl (2012) reported a coefficient alpha of .82. The internal consistency of the Satisfaction with Life Scale is .88, which is a little higher than previous research (Samaha & Hawi, 2016). Overall, the scales are all greater than .80, indicating strong internal consistency (Table 2).
Table 1. Reliability Analysis for Scales

<table>
<thead>
<tr>
<th>Scales</th>
<th>Cronbach Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young’s Internet Addiction Test Short Form</td>
<td>.84</td>
</tr>
<tr>
<td>Aitken Academic Procrastination Inventory</td>
<td>.90</td>
</tr>
<tr>
<td>Satisfaction with Life Scale</td>
<td>.88</td>
</tr>
</tbody>
</table>

Table 2. Results of Scales

<table>
<thead>
<tr>
<th>Scales</th>
<th>Min. score</th>
<th>Max. score</th>
<th>Median</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Addiction Scale</td>
<td>14</td>
<td>60</td>
<td>29</td>
<td>29.19</td>
<td>6.72</td>
</tr>
<tr>
<td>Academic Procrastination Inventory</td>
<td>19</td>
<td>83</td>
<td>44</td>
<td>43.8</td>
<td>12.55</td>
</tr>
<tr>
<td>Satisfaction with Life Scale</td>
<td>5</td>
<td>35</td>
<td>26</td>
<td>29</td>
<td>6.79</td>
</tr>
</tbody>
</table>
CHAPTER 5

ANALYSES AND RESULTS

Demographics

There were 270 students from the University of Alabama who participated in the study. Twenty-seven participants started but did not complete the survey, and their responses were not included because of incomplete and random responses. The final dataset for analysis included 243 participants. 115 participants completed the survey for extra credit, and 128 participants completed the survey voluntarily and without any rewards. Demographic information of participants is shown in Table 1.

Most of the students were undergraduate students (13.9% freshmen, 30.4% sophomore, 23.8% junior, 21.8% senior, and 9.8% graduate). The average age of participants was 22.34 years ($SD = 5.70$).
### Table 3. Demographic Descriptive Statistic of Participants

<table>
<thead>
<tr>
<th></th>
<th>Percentage of Participants (%)</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>56%</td>
<td>136</td>
</tr>
<tr>
<td>Male</td>
<td>44%</td>
<td>107</td>
</tr>
<tr>
<td>Other</td>
<td>0%</td>
<td>0</td>
</tr>
<tr>
<td><strong>Level of School</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshmen</td>
<td>13.9%</td>
<td>34</td>
</tr>
<tr>
<td>Sophomore</td>
<td>30.4%</td>
<td>74</td>
</tr>
<tr>
<td>Junior</td>
<td>23.8%</td>
<td>58</td>
</tr>
<tr>
<td>Senior</td>
<td>21.8%</td>
<td>53</td>
</tr>
<tr>
<td>Graduate</td>
<td>9.8%</td>
<td>24</td>
</tr>
<tr>
<td><strong>Self-report GPA</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 and below</td>
<td>0.8%</td>
<td>2</td>
</tr>
<tr>
<td>2.00 – 2.50</td>
<td>2.8%</td>
<td>7</td>
</tr>
<tr>
<td>2.50 – 3.00</td>
<td>11.5%</td>
<td>28</td>
</tr>
<tr>
<td>3.00 – 3.50</td>
<td>23.8%</td>
<td>58</td>
</tr>
</tbody>
</table>

34
3.50 – 4.00 | 60.9% | 148

Ethnicity

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>%</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic or Latino or Spanish Origin of any race</td>
<td>1.6%</td>
<td>4</td>
</tr>
<tr>
<td>American Indian or Alaskan Native</td>
<td>0.4%</td>
<td>1</td>
</tr>
<tr>
<td>Asian</td>
<td>1.2%</td>
<td>3</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pacific Islander</td>
<td>0%</td>
<td>0</td>
</tr>
<tr>
<td>Black or African American</td>
<td>5.3%</td>
<td>13</td>
</tr>
<tr>
<td>White</td>
<td>88%</td>
<td>214</td>
</tr>
<tr>
<td>Other</td>
<td>3.2%</td>
<td>8</td>
</tr>
</tbody>
</table>

Analyses

Pearson Correlation was used to examine the relationship between problematic internet use (PIU), academic procrastination, and life satisfaction in the sample. Results are shown in Table 4. The value of the effect size of Pearson correlation coefficients varies between -1 to +1 and if the value of \( r \) varies around 0.1 the effect size is low, if \( r \) varies around 0.3 effect size is medium, and if \( r \) varies more than 0.5 effect size is large. According to Cohen (1992), \( d = 0.2 \) is considered a small effect size, 0.5 represents a medium effect size, and 0.8 is a large effect size.
The effect size criteria for ANOVA of $\eta^2 = 0.01$ indicates a small effect, $\eta^2 = 0.06$ indicates a medium effect, $\eta^2 = 0.14$ indicates a large effect.

To answer the first research question: is there a significant relationship between students’ problematic internet use and their academic procrastination? Pearson correlation was used to examine the relationship between PIU and life academic procrastination. There were positive relationships between participants’ total scores on the internet addiction test and their total scores on academic procrastination inventory ($r = 0.547$, $p < 0.01$). According to the finding value of the effect size is large. This finding suggests that students with higher scores on the internet addiction test also tended to have higher scores in the academic procrastination inventory.

To answer the second research question: is there a significant relationship between students’ problematic internet use and their life satisfaction? Pearson Correlation was used to examine the relationship between PIU and life satisfaction. Internet addiction test score had a negative correlation with the satisfaction with life scale ($r = -0.352$, $p < 0.01$). According to the finding value of the effect size is medium. Students who had a higher score on the internet addiction test had a lower score on the satisfaction with life scale.

To answer the third research question: is there a significant relationship between students’ academic procrastination and their life satisfaction? Pearson Correlation was used to examine the relationship between academic procrastination and life satisfaction. The result indicated a negative relationship between academic procrastination and life satisfaction ($r = -0.333$, $p < 0.01$). According to the finding value of the effect size is medium. This finding suggested that students with higher scores on the academic procrastination inventory also tended to have lower scores in the satisfaction with life scale.
Table 4. Pearson's product-moment correlation of each scale

<table>
<thead>
<tr>
<th>Scales</th>
<th>Internet Addiction Test – Short Form</th>
<th>Academic Procrastination Inventory</th>
<th>Satisfaction with Life Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Addiction Test –</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short Form</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Procrastination</td>
<td>.547*</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Inventory</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction with Life Scale</td>
<td>-.352*</td>
<td>-.333*</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Note. N =241 *p <0.01

To answer the fourth research question: do students' problematic internet use scores differ according to demographic variables (gender and ethnicity)? An independent-samples t-test was run to determine differences in internet addiction test scores between males and females, white and non-white participants. There was no statistical difference in mean internet addiction test scores between males and females, t(241)=.666, p=.505, and white and non-white participants, t(32)=0.177, p=.859. Further, the effect size for internet addiction test scores between male’s and female’s analysis (d = 0.08) and white and non-white participants (d = 0.04) did not exceed Cohen’s (1988) convention.

To answer the fifth research question: do students' academic procrastination scores differ according to demographic variables (gender and ethnicity)? An independent-samples t-test was
run to determine differences in academic procrastination test scores between males and females, white and non-white participants. There was a statistical difference in mean academic procrastination test scores between males and females, $t(241) = -4.073$, $p < .01$ (Figure 1). In line with this result, male students are more prone to academic procrastination than female students. There was no significance between white ($n = 214$) and non-white ($n = 29$) participants, $t(41) = -1.861$, $p = 0.069$ (Figure 2). Further, the effect size for academic procrastination test scores between males' and females' analysis ($d = 0.5$) was found to exceed Cohen’s (1988) convention for a medium effect ($d = 0.5$). and white and non-white participants ($d = 0.3$) was found to exceed Cohen’s (1988) convention for a small effect ($d = 0.2$).

Figure 1. Academic procrastination test score between males and females
To answer the sixth research question: do students' life satisfaction scores differ according to demographic variables (gender and ethnicity)? An independent-samples t-test was run to determine differences in life satisfaction test scores between males and females, white and non-white participants. There was no statistical difference in mean life satisfaction test scores between males and females, $t(241)=1.834$, $p=.067$, and white and non-white participants, $t(35)=-.196$, $p=.845$. Further, the effect size for life satisfaction test scores between male’s and female’s analysis ($d = 0.2$) exceeded Cohen’s (1988) convention small size ($d = 0.2$), and white and non-white participants ($d = 0.04$) did not exceed Cohen’s (1988) convention.

To answer the seventh research question: does the problematic internet use, academic procrastination, and life satisfaction scores of students differ significantly according to the time spent on the internet? A one-way ANOVA was conducted to determine if the internet addiction

Figure 2. Academic procrastination test score between white and non-white
score was different for daily time spent on the internet. As shown in Table 7, a good amount of students (34.5%) spend 5 to 6 hours a day on the internet. For approximately 10 percent of the students, this period is 9 hours or more. Participants were classified into five groups: Group-1 spends 1-2 hours daily (n = 13), Group-2 spends 3-4 hours daily (n = 77), Group-3 spends 5-6 hours daily (n = 84), Group-4 spends 7-8 hours daily (n = 45), and Group-5 spends 9 hours and more daily (n = 24) (Table 7). The result showed that there was a statistically significant difference for daily time spent on the internet, $F(4, 238) = 6.236, p < .01, \eta^2 = .09$. The data shows that the internet addiction scores increase with daily time spent on the internet. The most significant increase in the average internet addiction score occurs between Group-1 that spends 1-2 hours daily and the other groups. The first group has the lowest addiction score ($M_{Group-1} = 22.00, SD_{Group-1} = 6.15$) while the other groups have higher average scores that increase with the daily time spent on the internet ($M_{Group-2} = 28.10, SD_{Group-2} = 5.89; M_{Group-3} = 30.13, SD_{Group-3} = 6.70; M_{Group-4} = 30.41, SD_{Group-4} = 5.96; M_{Group-5} = 31.91, SD_{Group-4} = 8.15$) (Figure 3).

![Figure 2. Internet addiction score vs daily time spent on the internet](image-url)
Regarding daily time spent on the internet, a one-way ANOVA was conducted to determine if the academic procrastination score was different for daily time spent on the internet. The result showed there was statistically significant differences for daily time spent on the internet, $F(4, 238)=3.006, p < .05$, $\eta^2 = .04$. The data shows that the academic procrastination scores increase with daily time spent on the internet. The most significant increase in the average internet addiction score occurs between Group-1 that spends 1-2 hours daily and the other groups. The first group has the lowest academic procrastination score ($M_{Group-1} = 35.00$, $SD_{Group-1} = 8.15$) while the other groups have higher average scores that increase with the daily time spent on the internet ($M_{Group-2} = 43.51$, $SD_{Group-2} = 10.47$; $M_{Group-3} = 43.39$, $SD_{Group-3} = 13.68$; $M_{Group-4} = 45.28$, $SD_{Group-4} = 12.42$; $M_{Group-5} = 49.12$, $SD_{Group-4} = 14.48$) (Figure 4).

![Box plot of academic procrastination scores vs daily time spent on the internet](image)

*Figure 3. Academic procrastination score vs daily time spent on the internet*
Regarding daily time spent on the internet, a one-way ANOVA was conducted to determine if the life satisfaction score was different for daily time spent on the internet. The result showed there was statistically significant differences for daily time spent on the internet, $F(4, 238) = 2.423, p < .05, \eta^2 = .03$. The data shows that the satisfaction with life scores decrease with daily time spent on the internet. The most significant decrease in the average satisfaction with life score occurs between Group-1 that spends 1-2 hours daily and the other groups. The first group has the highest academic procrastination score ($M_{\text{Group-1}} = 27.00$ $SD_{\text{Group-1}} = 4.89$) while the other groups have lowest average scores that decrease with the daily time spent on the internet ($M_{\text{Group-2}} = 25.57$, $SD_{\text{Group-2}} = 5.96$; $M_{\text{Group-3}} = 24.10$, $SD_{\text{Group-3}} = 6.76$; $M_{\text{Group-4}} = 22.55$, $SD_{\text{Group-4}} = 7.63$; $M_{\text{Group-5}} = 22.50$, $SD_{\text{Group-4}} = 7.72$) (Figure 5).

![Figure 4. Life satisfaction scores vs daily spent on the internet](image)

Figure 4. Life satisfaction scores vs daily spent on the internet
Table 5. Self-reported internet Use

<table>
<thead>
<tr>
<th></th>
<th>Percentage of Participants (%)</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 Hours per day</td>
<td>5.3%</td>
<td>13</td>
</tr>
<tr>
<td>3-4 Hours per day</td>
<td>31.6%</td>
<td>77</td>
</tr>
<tr>
<td>5-6 Hours per day</td>
<td>34.5%</td>
<td>84</td>
</tr>
<tr>
<td>7-8 Hours per day</td>
<td>18.5%</td>
<td>45</td>
</tr>
<tr>
<td>9 hour and more per day</td>
<td>9.8%</td>
<td>24</td>
</tr>
</tbody>
</table>
CHAPTER 6

DISCUSSION

The present study was designed to investigate the relationship between problematic internet use (PIU), academic procrastination, and life satisfaction of students studying at the University of Alabama. Additionally, the effects of gender and ethnicity were discussed and interpreted. It was concluded that individuals with high PIU also have high academic procrastination behaviors and lower life satisfaction. In addition, it was observed that PIU differed significantly according to the time spent on the internet but did not differ according to gender and ethnicity. Also, it was observed that academic procrastination behavior differed considerably according to the time spent on the internet and gender but did not differ according to ethnicity. Finally, it was observed that life satisfaction behavior differed significantly according to the time spent on the internet but did not differ according to gender and ethnicity.

Findings

Problematic Internet Use and Academic Procrastination

First, the internet use levels of students were examined. The results showed that university students are moderately addicted to the internet. Secondly, the relationship between university students' problematic internet use and academic procrastination was examined. There is a moderate, positive, and significant relationship between problematic internet use and academic procrastination.
The findings of this study that excessive internet use disrupts academic life are consistent with previous literature. According to McCown and colleagues (1987), some of the reasons for procrastination might be a lack of skill in managing time, difficulty in focusing, and low sense of responsibility. Excessive use of internet had a negative affect the academic life of students (Andreassen et al., 2012; Glass et al., 2013; Junco, 2015; Paul et al., 2012). Specifically, being busy on the internet was found to be related to academic procrastination. In other words, it was observed that academic procrastination increased with problematic use of the internet.

Excessive internet use was associated with academic procrastination. PIU might lead students to leave their academic responsibilities until the last moment, as it takes a large part of their time. It may be said that as the participants' internet use increases, students spend less time on studying, delay their homework, do not comply with the lesson plan, leave their studies for the exam until the last few days, and postpone their academic responsibilities because they want to spend more time on the internet (Griffiths, 2001; Young, 2004; Saleem et al., 2015; Yang & Tung, 2007; Chen & Lu, 2016; Andreassen, 2012; Kirschner & Karpinski, 2010). According to Davis et al. (2002), research in social psychology shows that, problematic internet use is the primary reason for procrastination. It may explain issues in the productivity of problematic internet users' professional and academic failure. When academic procrastination is examined, it reveals excessive use of the internet as a potential culprit.

In previous literature, a significant relationship was found between PIU and academic procrastination behavior (Gurultu, 2016; Akdemir, 2013). Studies have shown that there is a positive relationship between internet addiction and academic procrastination (Teyfur, 2017; Gurultu, 2016). It has been found that the problematic use of the internet may be the cause of academic procrastination. According to Young (1998), the dominance of the internet in an
individual’s life is explained by preoccupation. As the preoccupation increases, the individual puts aside other duties and responsibilities related to work, education, career, and home. In other words, the internet is becoming the center of an individual’s life. This situation can lead the student to postpone the academic tasks they should be doing. Indeed, rather than academic duties, the internet becomes the center of life.

The information and findings in the related literature support the research findings that PIU has a relationship with academic procrastination. Based on these findings and other studies in the literature, it may be asserted that addicted individuals who spend a lot of time on the internet and are distracted and might postpone their academic duties and responsibilities.

**Problematic Internet Use and Life Satisfaction**

This research found a negative and significant relationship between PIU and life satisfaction. In other words, it has been determined that the problematic use of the internet is a factor in the reduction of life satisfaction. Life satisfaction can be expressed as a cognitive evaluation process based on a judgment of one's own life according to various criteria (Diener and Lucas, 1999). Individuals who spend a lot of time on the internet miss real-life experiences in which they will learn the skills of preventing conflict, coping with stress, and solving problems in daily life (Szwedo et al., 2011).

In the literature, there are studies supporting this finding of the research. Studies have determined that there is a negative relationship between internet addiction and life satisfaction (Ko et al., 2005; Wang et al., 2008, Ko et al., 2007). Wang and his colleagues (2008) concluded that internet addiction reduces academic achievement, leads to deterioration in interpersonal relationships, and provides excuses to avoid problems, and therefore decreases life satisfaction.
In addition, it is thought that the tendency of individuals with low life satisfaction to spend more time on the internet and their desire to obtain satisfaction from these environments may lead to higher internet addiction rates. Disturbingly, Kim et al. (2006) also emphasized that depression and suicidal ideation levels are higher in internet-addicted people.

When the findings and literature were evaluated, it was thought that the purpose of using the internet might have an effect on life satisfaction. If people consider the internet as a strategy for coping with problems, they may be prone to use it in a problematic way. If a person uses the internet for purposes such as entertainment or obtaining information, their life satisfaction may increase, and their PIU may decrease.

**Academic Procrastination and Life Satisfaction**

The study found a negative relationship between academic procrastination and the perception of life satisfaction. The main reasons for procrastination include the mistaken belief of having unlimited time, not being able to structure time adequately, not working based on performance while completing tasks, and not acting in accordance with an established plan. The work that cannot be completed according to the current plan is added to the next day, increasing that day’s workload. When procrastination becomes a habit, it may cause the person to experience increased pressure and eventually to worry, leading to decreased life satisfaction and negative experiences. On the other hand, life satisfaction is the individual's evaluation of his life according to his own criteria (Myers & Diener, 1995). This evaluation includes current, past, and future living conditions (Diener et al., 1999). Considering that a large part of a student’s daily life consists of academic responsibilities it may be influential in their life satisfaction.
In the literature, there are studies supporting the finding of this research. As a matter of fact, the results reveal that academic life is one of the critical variables in life satisfaction. As such, intrinsic academic motivation is associated with life satisfaction and positively affects well-being in general (Miquelon et al., 2005; Levesque et al., 2004; Chow, 2005; Powers, 2008; Kross et al., 2013). The results of the studies show that academic variables are as effective as personal variables in life satisfaction. (Chow, 2005; Powers, 2008)

**Problematic Internet Use with Gender and Time Spend Online**

A significant gender difference was not identified in this study. Several of the studies in the literature stated that men are more internet-addicted than women. (Griffiths, 1999; Di Nicola, 2004; Cao & Su, 2007; Morahan-Martin & Schumacher, 2000; Siomos et al., 2008). However, some studies found that internet addiction did not significantly differ according to gender (Kim et al., 2006; Jang et al., 2008; Pawlak, 2002). This difference can be interpreted as the way of measuring internet addiction in the studies and/or the cultural differences due to the different countries where the studies were conducted. In addition, the purpose for using the internet has been found to be affected by gender (Spilkova et al., 2017). It was found that while men are more likely to use the internet for playing online games, women are more likely to use it for shopping and social media (Wang, et al., 2008; Fumero et al., 2018; Bouna-Pyrrou et al., 2015; Spilkova et al., 2017; van den Eijnden et al., 2018). For this reason, the effect of gender differs in studies conducted.

A significant difference was found between the variable of daily time spent by the participants on the internet and their PIU. It has been determined that the relationship between the time spent on the internet and the behavior of problematic use of the internet is significant.
and positive. According to this result, it can be said that students who spend a lot of time on the internet daily are more prone to use the internet in a problematic way and more likely to form addictions compared to other students. Accordingly, it can be said that as the daily time spent on the internet increases, the dependency ratio will also increase.

Young (1996) stated that problematic internet users spend an average of 38.5 hours a week on the internet, while healthy users spend 4.9 hours. In a study conducted with university students in parallel with the result of the research, it was found that social media addiction increased in direct proportion to the increase in the time spent on social media. According to other research conducted, the problematic use of the internet increases in direct proportion to the increase in the time people spend on the internet (Senturk, 2017; Ince & Kocak, 2017; Akdemir, 2013). Individuals who spend a long time on the internet are more exposed to the negative consequences of the internet (Young, 1999; Chou & Hsiao, 2000; Nalwa & Anand, 2003; Ferraro et al., 2007).

In light of this information, if internet users limit and control the time they spend on the internet, they will use the internet healthily and consciously and will not be affected by the possible consequences of PIU. Here, time management has an essential function during the time spent on the internet. It is thought that the increase in the time spent on the internet paves the way for the deviation from the purpose of use and the increase of possible problems.

**Academic Procrastination with Gender and Time Spent Online**

As a result of the research, it was found that the academic procrastination scores of the male participants were higher than the academic procrastination scores of the female participants. In this case, it can be said that gender has a significant effect on academic
procrastination behavior and that male participants exhibit academic procrastination more intensely than female participants. However, when the determining effect size is examined, it is seen that the effect level of gender on academic procrastination is low.

A significant difference was found between the participants' daily time spent on the internet and academic procrastination. It has been determined that there is a positive relationship between time spent on the internet and academic procrastination that is significant. Since the participants spend a lot of time on the internet and cannot leave these environments on time, they do not perform their academic duties such as doing their homework, preparing for exams, or complying with plans, thus exhibiting procrastination. In a study conducted at Alfred University, it was concluded that one of the most important reasons for being expelled from school is internet addiction. Long-term internet users were twice as likely to miss classes compared to those who used the internet occasionally. According to the study, 32 out of 75 students used the internet for at least six hours a night (Yuen & Lavin 2004). In Young's (1999) study examining the effect of PIU on academic achievement, it was concluded that as individuals' internet use duration increases, their productivity in their work and school lives decreases. In addition to this result, problems such as deterioration in working patterns, decreased course success, and failure in class are also observed (Young, 1997).

**Life satisfaction with Gender and Ethnicity and Time Spent Online**

According to the results of studies on life satisfaction, it has been revealed that there is no association between gender and ethnicity with life satisfaction and that close social relations and cultural factors have a more significant effect on predicting life satisfaction (Pavot & Diener, 1993). Considering the factors affecting life satisfaction, gender, educational status, social life,
work-life, marriage, health status, personality structure, financial situation, and socio-cultural activities are seen (Dockery, 2003). Apart from these, close environment relations, self-confidence, having children, intimate partner relationships, self-understanding, having a job, entertaining activities, and socializing are other factors that affect life satisfaction (Flanagan, 1978). Based on these results, it has been seen that life satisfaction can be affected by many factors, and it is complicated to establish a relationship based on a single element.

Moreover, there was a negative relationship between time spent on the internet and life satisfaction. The reason for this negative relationship might be that individuals with low life satisfaction use the internet as a dysfunctional coping strategy because there were few elements in their lives that would make them happy and satisfied (Ellison et al., 2007; Ko et al., 2005). Individuals with high life satisfaction have positive mental health characteristics, so they use the internet in healthier ways and act more controlled on the internet so that they have less problematic internet use (Wang, 2006). As the time students spend on the internet increases, students prefer the virtual environment instead of their social environment, and as a result, their life satisfaction decreases by being alone (Wang et al, 2008). This research concluded that as students' internet use increases, their life satisfaction decreases.

**Limitations and Future Research Directions**

It is possible to mention several limitations regarding this study. This study was carried out with students studying at The University of Alabama, and it can be recommended to conduct similar studies at other universities with a larger population and larger sample. One of the limitations was the sample size. 243 students participated in the study. Larger sample size can be used to achieve more significant results. The same study can be applied to children, adolescents,
and university students studying in different departments, and it can be examined whether similar results can be obtained.

In future research, possible factors that may affect university students' internet addiction, academic procrastination, and life satisfaction levels can be examined. The subject can be studied comparatively between generations. The fact that the study was conducted only in one university limits the generalizability of the results. Therefore, it may be helpful to examine the variables in terms of different faculties and universities.

Research findings are limited to the data obtained from Young’s Internet Addiction Test Short Form (IAT-SF), Aitken Academic Procrastination Inventory, and Satisfaction with Life Scale. In this study, the duration of internet usage was determined based on the participants’ statements. It should also be kept in mind that participants may be biased when evaluating themselves with self-report scales. In order to prevent this, some improvement studies can be done in the design of the study. For example, device usage data can be used to measure internet usage. Thus, users' internet usage habits can be evaluated objectively. Apart from this, it is thought that it would be useful to determine the users’ problematic internet levels (high/medium/low).

In the study, PIU was examined as independent and output variables. In future studies, different problematic internet usage patterns with the same variables can be examined (social media addiction, porn addiction, online game addiction, etc.) At the same time, while discussing the research findings, it was seen that it is necessary to examine the relationship between internet use motivations and PIU in further studies for a better examination of the subject. Users with different motivations may have different usage habits.
It is hard to clearly explain the effects of students' internet use on life satisfaction based on correlational data. In addition, cross-sectional research methods can only assess other constructs such as internet use, academic procrastination, and life satisfaction at only one time. For these reasons, longitudinal studies are recommended to evaluate the causal aspects of internet use, academic procrastination, and life satisfaction in future research.

The findings of this study are thought to be beneficial for mental health professionals. Psycho-educational groups or interaction groups can be formed on issues such as time management and healthy internet use for internet users who use the internet problematically, feel lonely, and cannot receive adequate social support. Finally, considering that internet access has become easier and has users of all ages, the PIU of other education levels (primary, secondary, and high school) or different age groups should be examined in detail. In addition, it is thought that it would be beneficial to organize studies to prevent PIU for all age groups. Along with the studies aimed at raising awareness about PIU, educational studies aimed at conscious and safe internet use can be carried out for families, children, adolescents, and young adults. Students can be informed about the problems caused by internet addiction and the effects of academic procrastination on students' school success by psychological counselors and psychologists at universities.

Considering the relationship between perceived life satisfaction and internet addiction, studies can be carried out to strengthen social support networks by psychological counselors and psychologists of universities.
Implications

With the internet becoming more popular and accessible over time, it is easier for people of almost all ages to use the internet. When the literature is examined, in addition to the benefits of the internet, its adverse effects, especially on the physical and psychological development of young adults, are revealed. Various studies in the literature found that PIU and some psychiatric disorders are seen simultaneously (Shapira et al., 2000). Some studies point out that lonely and depressed individuals display PIU (Chen & Peng, 2008; 2007; Kim et al., 2006). A group of researchers also stated that depression, low self-esteem, and low life satisfaction are associated with PIU (Armstrong, 2000; Ko, 2006; Ryu et al., 2004). Studies have shown that PIU has symptoms such as spending hours on the internet, skipping meals to access and stay on the internet, delaying classes or appointments, loss of interest in non-internet pursuits, and decreased productivity (Young, 2008).

The internet, which has become an indispensable requirement in many areas of life, has started to be widely used in all student groups of all ages, especially due to the transition to distance education due to the pandemic. It is necessary to think deeply about how to use technology and the internet in a proper and safe way. As educators and educational psychologists, this work aims to offer some implications and guidance for school psychologists, psychological counselors, and educational psychologists as technological advances are changing students' lives in such rapid and revolutionary ways. Chou (2001) recommends informing the educators such as teachers, teaching assistants, and dormitory administrators about the risks of PIU in order to avoid excessive internet use. In addition, Chou (2001) argued that PIU symptoms would facilitate the identification and intervention of students with potential academic and psychological problems if student affairs managers, faculty members, psychiatrists, and parents
know. Additionally, one of the departments that should work on eliminating and preventing the effects of PIU and academic procrastination is the department of educational psychology. While educational science tries to put forward theories and principles to affect behavioral changes in humans, psychology explains human behavior. In short, educational psychology is a mixed field that feeds on the psychology of development and learning. For this reason, it is an important field in researching internet use and its possible effects on academic and life satisfaction and precautions. Therefore, this study will be helpful in providing detailed information about the relationship between PIU and academic procrastination and life satisfaction.

**Conclusion**

In conclusion, the present study examined the relationship between problematic internet use, academic procrastination, and life satisfaction among The University of Alabama students. Significant findings from the study are that problematic internet use has a significant relationship with academic procrastination and life satisfaction. It has a positive association with academic procrastination and a negative association with life satisfaction. The study reports that while no relationship was found between academic procrastination and ethnicity, a considerable relationship was found between academic procrastination and gender and age variables. Finally, the daily time spent on the internet is positively associated with problematic internet use academic procrastination and negatively associated with life satisfaction.
References


Pavot, W., & Diener, E. (2008). The satisfaction with life scale and the emerging construct of life satisfaction. The journal of positive psychology, 3(2), 137-152.


July 6, 2021

Merve Narci  
Department of Educational Psychology  
College of Education  
University of Alabama  
The University of Alabama  
Box 870231  

Re: IRB # 21-05-4680: “The Relationship Between Problematic Internet Use and Academic Procrastination and Life Satisfaction of University Students”

Dear Merve Narci,

The University of Alabama Institutional Review Board has granted approval for your proposed research. Your application has been given exempt approval according to 45 CFR part 46. Approval has been given under exempt review category 2 as outlined below:

(2) Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met:

(i) The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects

The approval for your application will lapse on July 5, 2022. If your research will continue beyond this date, please submit the annual report to the IRB as required by the University policy before the lapse. Please note, any modifications made in research design, methodology, or procedures must be submitted to and approved by the IRB before implementation. Please submit a final report form when the study is complete.

Please use reproductions of the IRB approved informed consent form to obtain consent from your participants.

Sincerely,
Appendix B

Personal Information Form

1- What is your gender?

Woman ( ) Man ( ) Other (please specify) ( )

2- What is your age?

3- What is your level of school?

Freshmen ( ) Sophomore ( ) Junior ( ) Senior ( ) Graduate ( )

4- What is your current GPA?

2 and below ( ) 2.00-2.50 ( ) 2.50-3.00 ( ) 3.00-3.50 ( ) 3.50-4.00 ( )

5- Please specify your ethnicity (or Race)?

Hispanic or Latino or Spanish Origin of any race ( )

American Indian or Alaskan Native ( )

Asian ( )

Native Hawaiian or Other Pacific Islander ( )

Black or African American ( )

White ( )

Other (Specify)
6-How often do you use internet related websites daily (social media, online gaming, online shopping, sending e-mail, browsing, views television shows or/and news)?

1-2 hours ( ) 3-4 hours ( ) 5-6 hours ( ) 7-8 hours ( ) 9 hour and more ( )
Appendix C

Young’s Internet Addiction Test Short Form (IAT-SF) (Young, 1998)

**Explanation:** Please indicate how often you experience the situations stated in the questions below. Please tick only one option for each question and do not leave any questions blank.

1-Never, 2-Rarely, 3-Sometimes, 4-Frequently, 5-Always

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-How often do you find that you stay on-line longer than you intended?</td>
<td></td>
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<tr>
<td>2-How often do you find yourself saying “just a few more minutes” when on-line?</td>
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<td>3-How often do you neglect household chores to spend more time on-line?</td>
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<tr>
<td>4-How often do you try to cut down the amount of time you spend on-line and fail?</td>
<td></td>
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<tr>
<td>5-How often do your grades or schoolwork suffer because of the amount of time you spend on-line?</td>
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<tr>
<td>6-How often do you lose sleep due to being online late at night?</td>
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<tr>
<td>7-How often do you choose to spend more time on-line over going out with others?</td>
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<tr>
<td>8-How often do you try to hide how long you’ve been on-line?</td>
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</tr>
</tbody>
</table>
9-How often do you snap, yell, or act annoyed if someone bothers you while you are on-line?

10-How often do you feel depressed, moody, or nervous when you are off-line, which goes away once you are back on-line?

11-How often do you feel preoccupied with the internet when off-line, or fantasize about being on-line?

12-How often do you become defensive or secretive when anyone asks you what you do on-line?
Appendix D

Aitken Academic Procrastination Inventory (Aitken, 1983)

After carefully reading each of the items given below, indicate to what extent each item is suitable for you by marking the relevant option. There are no right and wrong answers.

1-Wrong  2- Mostly wrong  3- Sometimes right / Sometimes wrong  4- Mostly right  5- Correct

1-I delay starting things until the last minute.  
2-I’m careful to return library books on time. * 
3-Even when I know a job needs to be done, I never want to start it right away. 
4-I keep my assignments up to date by doing my work regularly from day to day. * 
5-If there were a workshop offered that would help me learn not to put off starting my work, I would go. 
6-I am often late for my appointments and meeting. 
7-I use the vacant hours between classes to get started on my evenings work. * 
8-I delay starting things so long I don’t get them done by the deadline. 

1  2  3  4  5
9-I am often frantically rushing to meet deadlines. 1 2 3 4 5

10-If often takes me a long time to get started on something. 1 2 3 4 5

11-I don’t delay when I know I really need to get the job done. * 1 2 3 4 5

12-If I had an important project to do, I’d get started on it as quickly as possible. *

13-When I have a test scheduled soon, I often find myself working on other jobs when the test deadline is near. 1 2 3 4 5

14-I often finish my work before it is due. * 1 2 3 4 5

15-I get right to work at jobs that need to be done. * 1 2 3 4 5

16-If I have an important appointment, I make sure the clothes I want to wear are ready the day before. *

17-I arrive at college appointments with plenty of time spare. * 1 2 3 4 5

18-I generally arrive on time to class. * 1 2 3 4 5

19-I overestimate the amount of work that I can do in given amount of time. 1 2 3 4 5

*Indicates the items to be reversed scored.
Appendix-E

Satisfaction with Life Scale (Diener, Emmons, Laresen, and Griffin, 1985)

Below are five statements that you may agree or disagree with. Using the 1 – 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

• 7 - Strongly agree

• 6 - Agree

• 5 - Slightly agree

• 4 - Neither agree nor disagree

• 3 - Slightly disagree

• 2 - Disagree

• 1 - Strongly disagree

(   ) In most ways my life is close to my ideal.

(   ) The conditions of my life are excellent.

(   ) I am satisfied with my life.

(   ) So far, I have gotten the important things I want in life.

(   ) If I could live my life over, I would change almost nothing.